PART THREE: A NEW BEGINNING, 1970–1980

The 1960s were a period of serious reflection on the rate and complexity of material development. The decade was not just a passing segment of protest marches, utopian experiments, amplified music, flower children dancing in the parks, and teenagers learning Barry Commoner's four laws of ecology. Academic scholars, newly endowed institutes, government agencies, social organizations, media representatives, and cultural groups began to assess the impact of technology on contemporary civilization. The first studies took a negative view toward the complex technological systems that have come to dominate human life. Chemicals were found in the life chain, emissions from automobiles and industry filled the air, and such beneficial products as soap were destroying the nation's groundwater supply. Reports documented the vast consumption of the earth's natural resources at an alarming rate. Many voices were raised about slowing down the "megamachine" of modern civilization.

A second phase of literature of the late 1960s and 1970s pointed to the fact that mankind has always depended on technology. A more mature assessment noted that the choice was not an attempt to return to simple tools and machines, but to explore "alternative technologies." The idea of examining "alternatives" became the policy of most public improvements. In the meantime, the engineering profession had experienced a similar period of critical evaluation. The fact that many decisions had been made by isolated experts working in very specialized areas of knowledge became evident. A coordinated or comprehensive approach to problem solving was noted. Design teams, which were once made up of specialists from one field of study, were now interdisciplinary groups. In addition, many special interest factions were being consulted at the crucial steps in the planning, implementation, construction, and evaluation stages of any federal project. Public participation, interdisciplinary approaches, problem solving, and the generation of technological alternatives became an accepted approach for starting any important public work. Laws passed during the 1970s provided guidelines to this approach.

The Corps of Engineers, which is the nation's largest single engineering agency, began to adopt these methods of comprehensive design in the 1970s. Other agencies, such as the Upper Mississippi River Basin Commission, were established to address the complex issues of water resource and water quality management. One of the intergovernmental "new Imperatives" that was created to

"devise a rational management strategy" for the upper Mississipi River was the Great River Environmental Action Team (GREAT). The following chapter describes the evolution of this experiment in interdisciplinary organization.

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INTERGOVERNMENTAL WATERS: THE GREAT RIVER IDEA

The upper Mississippi River serves a multitude of interests that place diverse and often conflicting demands on the land and water resources of the watershed. Historically, there has been very little coordination or cooperation between the federal agencies and natural resource units of river-bordering states. Little effort has been made to develop a comprehensive plan of river management that would address social, environmental, and economic needs. In addition, separate congressional actions have dictated that the upper Mississippi be managed in the national interest to serve navigation, commerce, and fish and wildlife. Congress authorized the Corps of Engineers to operate and maintain a nine-foot navigation channel on the upper Mississippi from Cairo to Minneapolis. This channel runs through approximately 266,000 acres of federal fish and wildlife refuge and state game management areas.[1]

The 29 locks and dams between St. Louis and Minneapolis were constructed to aid navigation. The system provided many benefits to wildlife and public recreation in some parts of the river system, but it also caused serious environmental problems in other areas, primarily because of certain channel maintenance practices. The practice of disposing of dredged materials in marshes, backwater channels, and sloughs often destroyed natural habitats. Many felt that navigation and commercial demands on the upper Mississippi overshadowed the needs of other river uses. Concern over the Corps' channel maintenance methods, and increasingly conflicting management practices among governmental units involved with river management, made clear the fact that the problems associated with the watershed needed identification, examination, and resolution.[2] The Upper Mississippi River Basin Commission (UMRBC) was established in 1972 by a Presidential executive order at the request of the governors of the states within the upper Mississippi River drainage basin. The purpose of the UMRBC was to develop a region-wide river management plan that would cover all aspects of the basin's water and land resources. The commission included members from the ten major federal agencies with related resource programs and the governors of each state in the upper Mississippi River basin.[3]

Litigation brought against the Corps' dredging operations by the state of Wisconsin in 1973 led the St. Paul and Rock Island Districts of the Corps to prepare environmental impact statements in accordance with the National Environmental Policy Act of 1969. The resulting documents described the serious damage to the environment caused by the channel maintenance program. They also disclosed that little scientific information was available on many aspects of the upper Mississippi. The lack of data concerning man's impact on the river's resources hindered planning for the future.[4]

Among those expressing concern over the results of the environmental impact statements was the Minnesota-Wisconsin Boundary Area Commission. This citizen commission, organized in 1965 by Wisconsin and Minnesota, was created to study and make recommendations concerning water resource issues related to the Mississippi and St. Croix rivers. The ten-member commission voted unanimously to send a delegation to Washington to inform Congress of the problems resulting from current channel maintenance practices on the navigation channel. Specifically, the commission requested an appropriation to fund interdisciplinary studies and field tests on the environmental effects of channel maintenance. The commission sought accurate data for future resource planning and decision making. Members of the commission recognized the need for both commercial and recreational uses of these waterways and believed that the upper Mississippi was capable of accommodating all users in an environmentally sound manner. But the commission emphasized that only coordinated interdisciplinary efforts would solve the complex problems of the upper Mississippi. They could not be addressed by a single state or federal agency.[5]

Minnesota Congressman Albert Quie and Wisconsin Congressman Vernon Thompson supported the commission's testimony to Congress in 1974. The commission requested an additional appropriation to the Corps' budget of $1 million to undertake special studies and field tests in fiscal year 1975. Congress authorized $375,000 for these studies and tests on the stretch of the upper Mississippi between Minneapolis and the mouth of the Missouri River.[6]

With the heightened awareness of Congress and the public about upper Mississippi River management problems, the Corps North Central Division Engineer and the U.S. Fish and Wildlife Service's North Central Regional Director formed a partnership in September of 1974. They requested that the Upper Mississippi River Basin Commission, of which both were members, organize a study to re-examine all important values and resources of the upper Mississippi rather than only channel maintenance problems. They asked that the UMRBC develop a management plan for the multi-purpose use of the river. Such a plan would include the effects of dredged material disposal, fish and wildlife habitats, water quality, recreational needs, floodplain management, and other vital river issues.

The Upper Mississippi River Basin Commission had established a cooperative "Dredge Spoil Practices Committee" consisting of representatives of the five principal river basin states and five river-oriented federal agencies.

The commission broadened the scope of this committee in October 1974 to form the "Great River Environmental Action Team," or simply, GREAT. This team was to be a broad-based, federal-state task force organized to develop a coordinated and balanced plan for managing the resources of the upper Mississippi River valley.[7] In October 1974 the commission gave GREAT the following set of objectives:

1. Develop ways to reduce significantly the volume of dredged material removed for the navigation project.
2. Open backwater areas that have been deprived of necessary freshwater flow as a result of navigation maintenance activity.
3. Ensure necessary capability to maintain the total river resources on the upper Mississippi River in an environmentally sound manner.
4. Contain or stabilize all floodplain dredged material placement sites to benefit the river resources.
5. Assure that all navigation project authorizations include fish, wildlife, and recreation as project purposes.
6. Develop physical and biological baseline data to identify factors controlling the river system.
7. Identify sites that can be developed to provide for fish and wildlife habitats irretrievably lost to water development projects.
8. Identify and develop ways to use dredged material as a valuable resource for productive uses.
9. Implement programs to provide for present and projected recreation demands on the river system.
10. Strive to comply with federal and state water quality standards.
11. Strive to comply with federal and state floodplain management standards.
12. Develop procedures for ensuring an appropriate level of public participation.

The original team studied that segment of the upper Mississippi from the head of navigation at Minneapolis to Lock and Dam No. 10 at Guttenberg, Iowa. In 1976 a second team, "GREAT II," was formed to study the Mississippi from Guttenberg to Saverton, Missouri. One year later "GREAT III" was established to study the river from Saverton to the mouth of the Ohio River at Cairo. Each of the three teams faced separate but similar issues. For example, all three examined fish and wildlife management, water quality, alternative dredge spoil uses, and recreation. Significant differences in topography, climate, and land and water conditions over 800 miles of the upper Mississippi meant that site-specific investigations were required. The conditions, for example, are much different in the stretch of river from Cairo to St. Louis, where slackwater pools do not exist and wing dams are used to maintain the river channel. In each team, representatives from appropriate states and federal agencies participated on an equal basis. GREAT I, for example, was composed of representatives from the states of Minnesota, Wisconsin, and Iowa; the Soil Conservation Service; the Environmental Protection Agency; the Fish and Wildlife Service; the Corps of Engineers; and the Coast Guard. The Upper Mississippi River Basin Commission and the

Minnesota-Wisconsin Boundary Area Commission also participated in a nonvoting capacity.[8]

During the first two years, GREAT expenses were paid by Corps of Engineers operation and maintenance funds. In 1976 the GREAT study was authorized by Congress in section 117 of the 1976 Water Resources Act. The authorization asked the study group to develop a multi-purpose plan for the upper Mississippi. All three teams organized a series of work groups, each concerned with a certain river resource or issue. Every work group included a voting member from each participating state and agency, and was directed to carry out objectives related to the group's subject. This task required extensive data collection and detailed analysis. Each work group was led by the representative of the state or agency that had the most expertise in the area. For example, the Fish and Wildlife Management Work Group was chaired by the U.S. Fish and Wildlife Service in GREAT I.[9]

The GREAT I team's policy was that "total resource management plans require interdisciplinary planning to address the broad range of complex issues involved including economic, environmental, and social consequences of plan implementation." This became an important guideline for all involved in the GREAT study.[10]

GREAT members urged the public to serve in the work groups and to become involved in meetings. Within each team a special public participation work group was established, which was responsible for gathering public feedback and for keeping the public aware of the progress of GREAT. Members held a series of public meetings in towns in Wisconsin, Iowa, and Minnesota in 1974 and 1975 at the very start of the GREAT study to gather citizen reaction. The comments collected were forwarded to the appropriate work groups of GREAT I for consideration. Similar public meetings were held at the beginnings of GREAT II and GREAT III.[11] The participation of federal and state experts and concerned citizens ensured that problems relating to commercial navigation, fish and wildlife, public recreation, and cultural resources received a public forum.

Several pilot and demonstration programs were conducted by GREAT on selected areas of the river to test better methods of channel maintenance and environmental improvement. One experiment, the stockpiling of dredged materials in Minneapolis for use by the city as fill, to sand icy streets, or for other beneficial uses, proved successful. Demand for the material exceeded the supply. Both the Rock Island and St. Paul Districts experimented with side channel opening to improve and restore backwaters damaged by excessive sedimentation and dredge deposits. Reducing dredge depths to 11 and 12 feet in some areas of the St. Paul District segment of the upper Mississippi lowered dredging volumes during the study period with no serious adverse effects to navigation on the channel. There is some concern that the success of reduced-depth dredging might have been largely due to several low flow years on the upper Mississippi, but GREAT I concluded that reduced-depth dredging will continue to be possible in selected areas if certain guidelines are followed.[12]

The GREAT teams have finished their studies, and all but GREAT I's report have been published. While GREAT I and GREAT II started out to develop a total river resource management plan, time and funding limitations narrowed the scope of their studies. Both teams made considerable contributions toward the original goal, but the primary focus of the team efforts became channel maintenance. The teams examined the impact of the nine-foot channel navigation project and developed recommendations and plans for future channel maintenance taking into account all river resources. The teams' channel maintenance recommendations include guidelines for detailed site-specific locations as well as for managing the entire river system, although some recommendations violate current state and federal statutes. Channel maintenance recommendations are based on pilot studies, extensive site evaluations, water quality tests, dredge spoil investigations, and numerous other considerations. Already, St. Paul District is implementing, on various parts of the river, some of GREAT I's recommendations. If the District can acquire increased funding and authorization, it will be able to implement many others.[13] GREAT I and GREAT II recommended further studies and suggested the organization of ongoing interdisciplinary and interagency teams to follow up on GREAT recommendations.[14]

The findings of GREAT I, II, and III as well as other relevant river studies will be incorporated into an "Upper Mississippi River Basin Commission Comprehensive Master Plan." Authorized in 1978, the master plan was designed to identify the social, economic, recreational, and environmental objectives of the upper Mississippi River valley and to recommend legislation and guidelines to meet those objectives. GREAT will help the basin committee accomplish its plan.[15] Whether this plan becomes a working synthesis or simply another set of uncoordinated studies of special problems on the river remains to be seen.

As can be seen from this historical study, river management policies have changed to accommodate new technologies, evolving economic interests, and environmental advocates. Such bodies as the UMRBC and the GREAT study groups provide forums for gathering data and developing comprehensive plans that will be more responsive to the general welfare. The GREAT river study is a model of federal and state agencies working together in an effective, joint effort to achieve common goals. It is a significant first step to open lines of communication among the public, the states, and the federal agencies involved with environmental issues on the upper Mississippi River.